RECORDS OF THE GREAT-BILLED HERON *ARDEA SUMATRANA* RAFFLES, 1822 FROM THE TIN CAN BAY AREA, SOUTHERN QUEENSLAND

MARK BURNHAM, IAN GYNTHER AND ROD HOBSON

Burnham, M., Gynther, I. & Hobson, R. 2002 5 31: Records of the Great-billed Heron *Ardea sumatrana* Raffles, 1822 from the Tin Can Bay area, southern Queensland. *Memoirs of the Queensland Museum* **48**(1): 45-48. Brisbane. ISSN 0079-8835.

In March and May 2000, incidental sightings of Great-billed Heron *Ardea sumatrana* were made in the Tin Can Bay area, situated at the southern end of the Great Sandy Strait close to the southern tip of Fraser Island. Two further sightings from this mainland locality resulted from a concentrated search in December 2000. These are the first records of *A. sumatrana* from this region since the 1950s when nesting was observed 60-70km to the north on Fraser Island. The temporal and spatial patterns of the present sightings suggest *A. sumatrana* is resident in the Tin Can Bay area, making this the most southerly population recorded in Australia over the past century. The discovery represents a significant southward extension to the Great-billed Heron's current Australian and global distributions. ❐ *Ardeidae, Ardea sumatrana, southern Queensland, Great Sandy Strait, estuarine areas.*

Mark Burnham, Queensland Parks & Wildlife Service, PO Box 101, Maryborough 4650; Ian Gynther (e-mail: Ian.Gynther@epa.qld.gov.au), Queensland Parks & Wildlife Service, PO Box 42, Kenmore 4069; Rod Hobson, Queensland Parks & Wildlife Service, PO Box 731, Toowoomba 4350, Australia; *received 10 October 2001.*

The Great-billed Heron *Ardea sumatrana* occurs from Burma and Thailand through Southeast Asia and Indonesia to New Guinea and Australia (Hancock & Kushlan, 1984). Although historically the species ranged as far south as NE New South Wales (Ramsay, 1888; Campbell, 1900), an individual recorded there in recent times (Gibson, 1981) is considered to have been vagrant or accidental (Marchant & Higgins, 1990; Pizzey & Knight, 1997). The accepted southern extent of the species post-1900 is the Great Sandy Strait coast of Fraser Island (25°15'S, 153°03'E), based on nesting records (Beruldsen, 1980) originating from the diary of the late Valdie Christensen in the early 1950s (G. Beruldsen, pers. comm.). Importantly, the Queensland Museum's collection does not contain skins or eggs of *A. sumatrana* from Fraser Island (A. Amey, pers. comm.); the records from this locality attributed to D.P. Vernon in Blakers et al. (1984) and Marchant & Higgins (1990) very likely refer to those of V. Christensen (D.P. Vernon, pers. comm.).

Over the ensuing half century since Christensen's records, no additional observations of *A. sumatrana* from the Great Sandy Strait have come to light. The current distribution of the species along the east Australian coast is usually given as Cape York to Broad Sound (22°25'S, 149°45'E; Marchant & Higgins, 1990) or the Rockhampton area (23°30'S, 150°55'E; Hancock & Kushlan, 1984; Pizzey & Knight, 1997), although more southerly sightings are documented at Eurimbula National Park (24°12'S, 151°48'E; Marchant & Higgins, 1990, where this locality is stated as 'Miriam Vale'; N.G. McKilligan, pers. comm.; D.H.C. Seton, pers. comm.) and the Biloela (Jambin) area (24°15'S, 150°25'E; Blakers et al., 1984; Marchant & Higgins, 1990). Garnett & Crowley (2000) stated there are no recent records south of Rockhampton and suggested the Australian distribution of *A. sumatrana* has contracted northwards up the east coast.

This paper, describing four separate sightings made during 2000 from the mainland Tin Can Bay area, confirms the continued existence of the Great-billed Heron in the Great Sandy Strait, southern Queensland.

MATERIALS AND METHODS

The general area where the sightings were made possesses numerous mangrove-lined creeks, each characterised by a seaward zone of closed *Rhizophora stylosa* and a landward saltpan, between which closed or open communities of *Avicennia marina* or *A. marina* and *Ceriops tagal* sometimes formed a narrow zone. *Bruguiera gymnorhiza* was occasionally present in open stands. Extensive saline grasslands and stands of sedges were present in the intertidal zone in some places. The upper tidal

reaches of each waterway were lined with a closed *Aegiceras corniculatum* community. Terrestrial vegetation surrounding the coastal wetlands consisted of tall open woodland to tall open forest, generally with *Eucalyptus racemosa*, *Corymbia intermedia* and *E. umbra* as dominants. The closed understorey contained a diverse range of heath species, ferns and sedges.

The first two encounters with *A. sumatrana*, in March and May 2000, occurred incidentally during components of a Water Mouse *Xeromys myoides* survey program being conducted by MB in estuarine areas between Rodds Peninsula and Tin Can Inlet. The survey and reconnaissance work involved in this program entailed negotiating tidal waterways by boat and traversing adjacent areas of mangrove, saltmarsh and saltpan on foot. A subsequent, targeted survey for *A. sumatrana*, conducted from 12-13 December 2000, focused on the locations of the two earlier sightings but also examined other suitable habitat in the general vicinity. During this follow-up work, two parties, each comprising two observers, used boats to search tidal creeks and other waterways to their navigable limits. All areas were visited twice over the two day period. Occasionally, searches of adjacent habitat were also undertaken on foot. Colour aerial photography (1:12,000 scale) proved to be an indispensable aid during the survey. Observations were made with Leica 10x42B binoculars and locations recorded using a Garmin GPS 12 or a Garmin GPS 12XL.

RESULTS

All observations were made in or immediately adjacent to estuarine areas in the Tin Can Bay area within the latitudinal band 25°45'–25°55'S. Precise locations are withheld to minimise potentially negative impacts by bird watchers on this species that is noted for its sensitivity to human disturbance (Seton, 1973; Marchant & Higgins, 1990).

At 12:00 on 10 March 2000, a single adult *A. sumatrana* was observed at an initial distance of approximately 60m as MB and M. Ford walked beside a narrow tidal creek. The bird took flight from the ground within a low mangrove community consisting of *Avicennia marina*, *Rhizophora stylosa* and *Ceriops tagal*. It flew 350m upstream and into woodland adjacent to an area where sedgeland surrounded the creek's mangroves. The bird landed in an unidentified eucalypt where it behaved warily, not allowing an approach closer than 100m. A photograph taken at this range was sufficient to confirm the identification.

At 14:00 on 21 May 2000, while canoeing around a bend in another small creek 4.4km from the previous sighting, MB and J. Holt observed an adult *A. sumatrana* at close range (10m) as it perched 3m above ground in an *A. marina* amid a fringing, low mangrove community. Startled by the canoe's unexpected approach, the heron flew upstream until out of sight. It was not located again.

The subsequent, targeted survey conducted by four observers yielded two sightings of single *A. sumatrana* on 13 December 2000. At 07:30, MB and RH briefly glimpsed an individual flying downstream beside a section of a third creek 3.2km and 2.4km, respectively, from the locations of the first and second incidental sightings described above. Here, scattered *Aegiceras corniculatum* lined the water's edge. A steep, 10m bank obscured the view of the heron as it flew at 6-8m height, just below the canopy level of the surrounding terrestrial woodland.

At about 11:00 the same day, while searching an area 360m straight-line distance downstream of the site where the March 2000 observation was made (and 3.4km from the location of the earlier observation that morning), IG and K. Wortel sighted an *A. sumatrana* as it flushed from a shallowly-flooded mangrove and saltpan area situated between the creek bank and the dense mangroves lining the creek channel. Mangrove species were *A. marina*, *R. stylosa*, *C. tagal* and *Bruguiera gymnorhiza*. Initial viewing range was approximately 35m as the bird flew parallel to shore at a height of only 3m before veering away to land in a 9m high *Eucalyptus umbra*, some 80m from the creek in the adjacent woodland. The heron perched at 5m on a horizontal limb (Fig. 1) and remained there, watchful, until flushed when IG approached too closely on foot to obtain additional photographs. It then flew only 30m to an exposed, dead branch of a *Melaleuca quinquenervia* where more photographs were taken (Fig. 2). Views with binoculars at ranges down to 30m revealed the bird to be in breeding plumage as indicated by its grey facial skin, nuchal crest, and long plumes on the lower foreneck and back (Marchant & Higgins, 1990; Pizzey & Knight, 1997). After a brief and unrewarded search for nests in the immediate vicinity, the site was departed at 12:20 with the heron still in the same tree.

FIG. 1. *Ardea sumatrana* perched in *Eucalyptus umbra*, Tin Can Bay area, SE Queensland.

FIG. 2. Final perching position of the *Ardea sumatrana* individual, Tin Can Bay area, SE Queensland.

DISCUSSION

That the three sighting dates reported here span a nine month period suggests *A. sumatrana* is resident, not vagrant, in the Tin Can Bay area. Two observations made nine months and just 360m apart on the same creek also suggest a resident individual was involved. The species is known to be solitary and sedentary (Blakers et al., 1984; Hancock & Kushlan, 1984), with probable territory sizes of several square kilometres (Marchant & Higgins, 1990). Previous Queensland studies have found territories are separated by 1.5km (straight-line distance) and 5km (by river) along the same estuarine system (Seton, 1973; Garnett & Bredl, 1985). Consequently, although all our observations involved single birds, the likelihood that more than one individual exists at the locality is supported by sightings made the same morning, but more than 3km apart on different creeks, and by the separation of each of the three general sighting locations by 2.4 to 4.4km. These distances are all straight-line measures – actual separation of the sites by water would be much greater. Considered together, the results indicate that the area in question may support a small population of Great-billed Herons.

If this assumption is correct, the Tin Can Bay area represents the southernmost locality occupied by *A. sumatrana* in Australia since 1900, being 60-70km south of the previous records from the western shore of Fraser Island (Beruldsen, 1980; V. Christensen via G. Beruldsen, pers. comm.) and approximately 330km south of Rockhampton, often cited as the modern limit of the distribution of this species (Hancock & Kushlan, 1984; Pizzey & Knight, 1997; Garnett & Crowley, 2000). The apparent persistence of a population in the Great Sandy Strait 50 years after it was last noted argues the suggested northward contraction of the species' distribution up the east coast (Garnett & Crowley, 2000) may not have been as extensive as originally thought. Although conclusive evidence of present day nesting of *A. sumatrana* at this locality is not available, extensive areas of suitable habitat along remote and seldom-visited tidal creeks in the Tin Can Bay area, as well as further north along the Great Sandy Strait, offer

ample opportunities for breeding by this species. Additional surveys are required to confirm this possibility and to better define the distribution and abundance of *A. sumatrana* in the region.

ACKNOWLEDGEMENTS

We are especially grateful to the Department of Natural Resources and Mines, Department of Primary Industries (Forestry) and the Australian Defence Force for permitting access to their lands and to Kirsten Wortel for her valuable assistance during the December 2000 survey. Excellent field and logistical support was provided by Jennifer Holt and Michael Ford. Paul Grimshaw kindly identified a botanical specimen. Gordon Beruldsen, Don Seton, Neil McKilligan and Don Vernon generously provided information about previous Queensland records of *A. sumatrana*.

LITERATURE CITED

BERULDSEN, G. 1980. A field guide to nests and eggs of Australian birds. (Rigby: Adelaide).

BLAKERS, M., DAVIES, S.J.J.F. & REILLY, P.N. 1984. The atlas of Australian birds. (Melbourne University Press: Melbourne).

CAMPBELL, A.J. 1900. Nests and eggs of Australian birds. (Pawson & Brailsford: Sheffield).

GARNETT, S.T. & BREDL, R. 1985. Birds in the vicinity of Edward River Settlement. Part I. Introduction, methods, study area, list of non-passerines. Sunbird 15: 6-23.

GARNETT, S.T. & CROWLEY, G.M. 2000. The action plan for Australian birds 2000. (Environment Australia: Canberra).

GIBSON, A. 1981. Great-billed Heron at Yamba. Australian Birds 16: 32-33.

HANCOCK, J. & KUSHLAN, J. 1984. The herons handbook. (Croom Helm: London).

MARCHANT, S. & HIGGINS, P.J. 1990. Handbook of Australian, New Zealand and Antarctic birds. Volume 1. Ratites to ducks. (Oxford University Press: Melbourne).

PIZZEY, G. & KNIGHT, F. 1997. The field guide to the birds of Australia. (Angus & Robertson: Sydney).

RAMSAY, E.P. 1888. Tabular list of all the Australian birds. (The author: Sydney).

SETON, D.H.C. 1973. Observations on breeding of the Great-billed Heron in northern Queensland. Emu 73: 9-11.